

SIDEWALL CHANNEL MOSFET WITH STRAINED SILICON CHANNEL ON STRAINED SiGe

Abstract

A structure for use as a MOSFET employs an SOI wafer with a SiGe island resting on the SOI layer and extending between two blocks that serve as source and drain; epitaxially grown Si on the vertical surfaces of the SiGe forms the transistor channel. The lattice structure of the SiGe is arranged such that the epitaxial Si has little or no strain in the direction between the S and D and a significant strain perpendicular to that direction.